

5/12/25

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	22405
<b>Description:</b> Beam Assembly	<b>Part Number:</b>	D3173-041
<b>Dwg:</b> D3173 Rev. B	<b>Qty:</b>	1
Page 1 of 1		

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveler	JS	05.02.14	1
2	GA	Cut blank: 56" long Material: 6061-T6 (QQ-A-200/8) Rect. Tube 4" x 2" x 0.125 thick (M6061T6TR4.0x2.0W125) M 13494	J.L	05/06/23	1
3	MV	Machine holes as per Folio FA295 and Dwg D3173 <b>Identify as D3173-1</b>	J.L	05/06/24	1
4	QC2	Inspect parts as they come off the CNC machine.	J.L	05/06/24	1
5	MV	Deburr	J.L	05/06/24	1
6	QC8	Second inspection	J.L	05-06-24	1
7	GA	Drill Ø0.316" holes as per Dwg D3173	ml	05-08-15	1
8	GA	C'sink holes as per Dwg D3173	ml	05-08-15	1
9	QC5	Inspect work to Step 8	J.L	05-09-13	1
10	FE	Chemical Conversion Coat per QSI 005 4.1	FC	05 12 06	1
11	GA	<b>Pick K10017.</b> Install Nut Plate as per Dwg D3173. D3178-041 is included in K10017 BOM. <b>Pick:</b> Qty Part Number Description Batch 2 D3178-041 Nut Plate B 22409 8 MS20601AD4W4 Rivet M 15611	FE	05.12.06	1
12	QC5	Inspect work to Step 11	J.L	05-12-06	1
13	FP	Powder Coat Gloss White (Ref: 4.3.5.1) per QSI 005 4.3 <b>Ensure Nut Plate thread is covered!</b>	FC	05 12 07	1
14	QC3	Inspect Powder Coat	ml	05 12 07	1
15	GA	Assemble per Dwg D3173. Install Mounting Lug as per Dwg D3173. D3175-041 is included in K10017 BOM. <b>Pick:</b> Qty Part Number Description Batch 2 D3175-041 Mtg Lug B 24409 8 AN3-5A Bolt M 14522 2 AN5-23A Bolt M 12755 8 AN960JD10 Washer M 18359 4 AN960JD516 Washer M 18254 2 MS21042L5 Nut M 17653	SB	05/12/07	1
16	QC5	Inspect work to Step 15	J.L	05.12.07	1
17	PK	Identify as D3173-041 and Pack with D130-701-041 loc: 86	CS	05/12/09	1
18	AC	Cost / part	5 uc	05-12-13	1
19	DC	Close W/O Inspect Level 21	Q	05/12/13	1

Rev	Date	Change	Revised By	Approved
A	02.12.05	New issue	KJ/RF RT	J

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector	
05-05-13	7	Make change too Qty 03173 for side holes. ( <del>the</del> missing one hole that passes right through. Permanent Change				UP 05.12.13 Per QSI 018	2 05-05-13	
05-05-13	10	<del>Dep + Change</del> <del>Permanent Change</del>				<del>UP</del>	<del>2</del> 05-05-13	

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			
05.06.24	3	Holes drilled on side face of beam instead of top face.	UP	Drill holes in correct location. Fill incorrect holes with weld and grind flush, Ensure surface is smooth with no pitting	05-09-13 PD	DD 05/09/13	UP 05.07.13 Per QSI 042	2 05-09-12

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ \_\_\_\_\_ Date: 05/10/13

NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_





DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3173	REV. B SHEET 1 OF 3
DATE 03.01.07		TITLE BEAM ASSEMBLY	SCALE NTS
A	02.12.03	NEW ISSUE	
B	03.01.07	REMOVE PIP PINS	

## PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3173-041	BEAM ASSEMBLY
1	D3173-1	BEAM
2	D3175-041	MOUNTING LUG
2	D3178-041	NUT PLATE
8	AN960JD10	WASHER
4	AN960JD516	WASHER
2	MS21042L5	NUT
8	MS20601AD4W4	RIVET
8	AN3-5A	BOLT
2	AN5-23A	BOLT

## NOTES

### D3173-1 BEAM:

- 1) PART IS SYMMETRICAL ABOUT CENTERLINE
- 2) MATERIAL: 6061-T6 RECTANGULAR TUBING, 4" x 2" x 0.125" WALL (QQ-A-200/8)  
(REF DART SPEC. M6061T6TR4.0x2.0W125)
- 3) BREAK ALL SHARP EDGES 0.010-0.020
- 4) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3 OUTSIDE ONLY
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

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COMMENT  
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03.01.20

DER  
22405

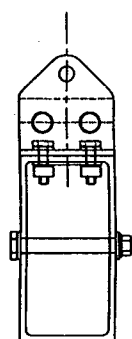
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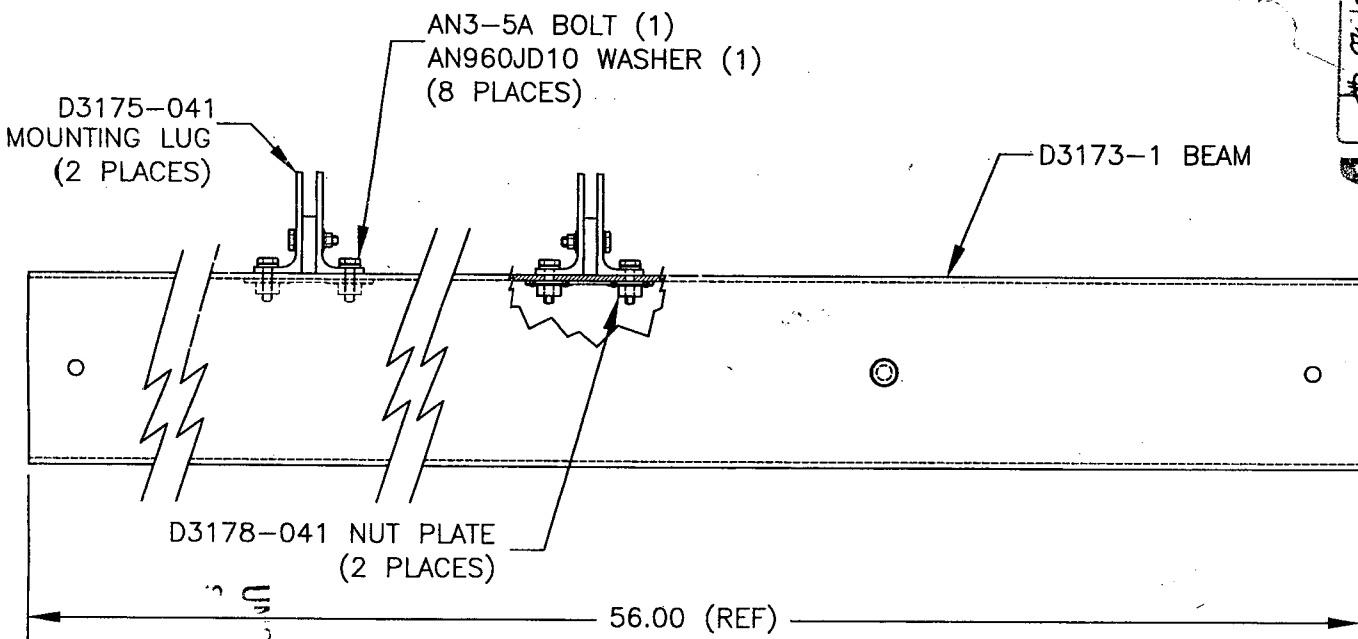
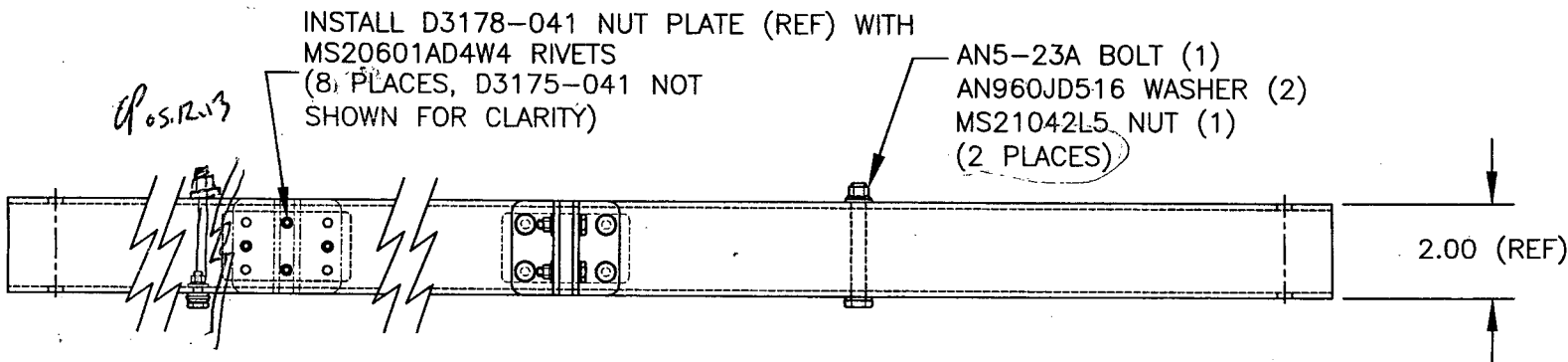
**DART**



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DATE	03.01.07	TITLE	BEAM ASSEMBLY	SHEET 2 OF 3
				SCALE 1:4



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03.01.20



**D3173-041 BEAM ASSEMBLY**

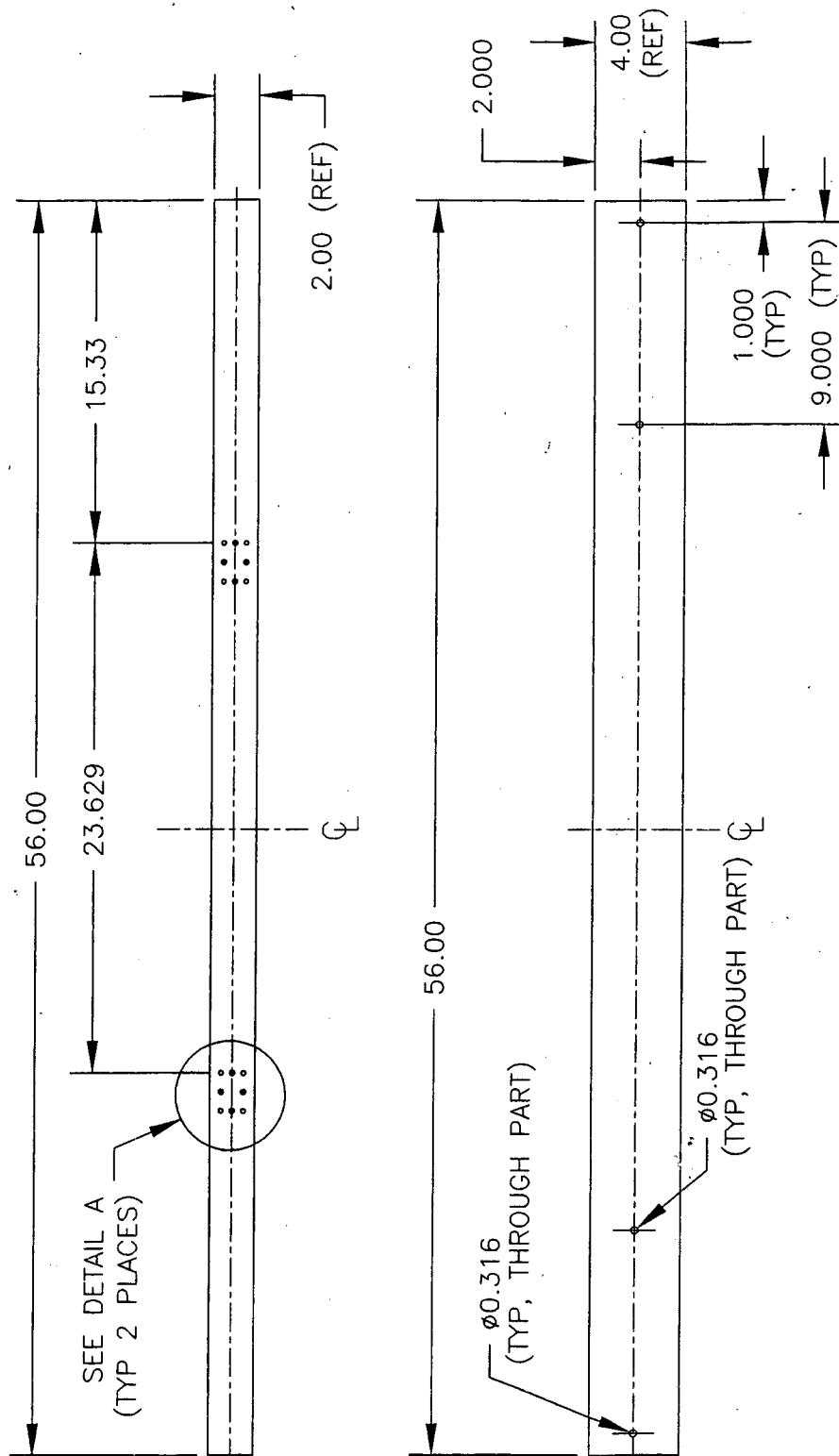
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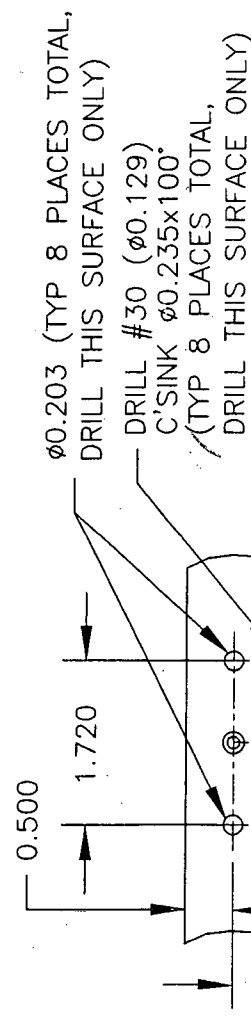
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CHECKED #	APPROVED #	DRAWING NO. D3173	REV. B SHEET 3 OF 3
DATE 03.01.07	TITLE BEAM ASSEMBLY		SCALE 1:8

D3173-1 BEAM



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03.01.20 #

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NO. 22405



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# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Feb 14, 2005  
07:34 am

Work Order No : 0022405  
Project Name : D3173-041  
Project For : WK516  
Work Order Type : Main  
Main WO Number :  
House Part Number : D3173-041  
Description : Beam Assembly  
Manufactured : Yes  
Amount Req'd : 1  
Amount Done : 0  
Start Date : 02-11-05  
Est Finish Date : 04-04-05  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
Order Entry No :  
OE Value : 0.00  
Est Margin : 0.000%  
Actual Margin : 0.000%  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
Burden	0.00	0.00	0.00		
Total Cost	0.00	0.00	0.00		
Margin	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00

**Chris Provencal**

---

**From:** "David Shepherd" <davids@dartaero.com>  
**To:** "Chris Provencal" <chrisp@dartaero.com>  
**Sent:** July 12, 2005 5:15 PM  
**Subject:** Re: BEAM.jpg

Chris,

This is an acceptable repair for this part.

David

----- Original Message -----

**From:** Chris Provencal  
**To:** David Shepherd  
**Sent:** Tuesday, July 12, 2005 2:36 PM  
**Subject:** BEAM.jpg

D3173-041 BEAM ASSEMBLY

Holes were accidentally drilled on the side face, full size, both attachment locations, centered on the neutral axis. They were filled with weld. I noticed one of the welds has a small cavity (beam2.jpg), I would need them to fix that.

Is this acceptable?

-Chris





# Job Costing Report ✓

Dart Aerospace Ltd.  
Hawkesbury

Nov 08, 2005  
10:12 am

Work Order No : 0022405  
Project Name : D3173-041  
Project For : WK516  
Work Order Type : Main  
Main WO Number :  
House Part Number : D3173-041  
Description : Beam Assembly  
Manufactured : Yes  
Amount Req'd : 1  
Amount Done : 0  
Start Date : 02-11-05  
Est Finish Date : 04-04-05  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
Order Entry No :  
OE Value : 0.00  
Est Margin : 0.000%  
Actual Margin : 0.000%  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	4.72	100.00		
Production Cost :	0.00	87.81	100.00	0.00	87.81
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	2.00	100.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	87.81	100.00		
Margin :	0.000	0.000			
Selling Cost :	0.00	87.81			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	( -87.81)

MUS 8/B  
a  
11-13

Date: Monday, 14/11/2005 8:44:48 AM  
 User: Alba Panzuto

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	BEAM ASSEMBLY
<b>Job Number</b> :	22405		
<b>Estimate Number</b> :	10407		
<b>P.O. Number</b> :		<b>Part Number</b> :	D3173041
<b>This Issue</b> :	14/11/2005	<b>S.O. No.</b> :	
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D3173 REV B
<b>First Issue</b> :	//	<b>Project Number</b> :	
<b>Previous Run</b> :		<b>Drawing Revision</b> :	B
	<b>Type</b> :	<b>Material</b> :	
	MACHINED PARTS	<b>Due Date</b> :	30/11/2005
<b>Written By</b> :		<b>Qty:</b>	1 Um: Each
<b>Checked &amp; Approved By</b> :			
<b>Comment</b> :	Est. A 02.12.05 New issue KJ/RF		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	M6061T6TR40X20W125	6061-T6 Rect Tube W.125
-----	--------------------	-------------------------

2.0	BAND SAW	BAND SAW
-----	----------	----------

**Comment:** BAND SAW

Cut blank: 56" long

Machine holes as per Folio FA295 and Dwg D3173

Identify as D3173-1

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--

**Comment:** INSPECT PARTS AS THEY COME OFF MACHINE

4.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
-----	-------------	-------------------------------

**Comment:** SMALL & MEDIUM FAB RESOURCE 1

Deburr

5.0	QC8	SECOND CHECK
-----	-----	--------------

**Comment:** SECOND CHECK

6.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
-----	-------------	-------------------------------

**Comment:** SMALL & MEDIUM FAB RESOURCE 1

Drill Ø0.316" holes as per Dwg D3173

C'sink holes as per Dwg D3173

Date: Monday, 14/11/2005 8:44:48 AM  
User: Alba Panzuto

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BEAM ASSEMBLY

Job Number: 22405

Part Number: D3173041

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

9.0

D3178041

Nut Plate

10.0

MS20601AD4W4

Rivet

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

12.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Gloss White (Ref: 4.3.5.1) per QSI 005 4.3

Ensure Nut Plate thread is covered.

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

14.0

D3175041

Mounting Lug

15.0

AN35A

Bolt

16.0

AN523A

Bolt

17.0

AN960JD10

Washer

18.0

AN960JD516

Washer

19.0

MS21042L5

Nut

20.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble per Dwg D3173.

Install Mounting Lug as per Dwg D3173. D3175-041 is included in K10017 BOM.

Date: Monday, 14/11/2005 8:44:48 AM  
User: Alba Panzuto

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BEAM ASSEMBLY

Job Number: 22405

Part Number: D3173041

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

21.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

22.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify as D3173-041 and Pack with D130-701-041

Location: \_\_\_\_\_

23.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

Job Completion

